



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/599,901

04/19/2007

Georg Busch

112740-1145

6294

29177 7590 05/07/2008
BELL, BOYD & LLOYD, LLP
P.O. BOX 1135
CHICAGO, IL 60690

EXAMINER

CAZAN, LIVIUS RADU

ART UNIT

PAPER NUMBER

3729

MAIL DATE

DELIVERY MODE

05/07/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/599,901	Applicant(s) BUSCH, GEORG	
	Examiner LIVIOUS R. CAZAN	Art Unit 3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The amendment filed on 1/31/2008 has been fully considered and made of record.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claim 8** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, it is unclear what is meant by the term “standard media variant”, as the claim does not specifically recite any properties that define the lacquer as such.

Claim Rejections - 35 USC § 102

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. **Claims 6 and 8** are rejected under 35 U.S.C. 102(b) as being anticipated by Hirose (US6407345 to Hirose et al.).

Regarding claim 6, Hirose discloses drilling through-holes (36, Fig. 1B) in a substrate and performing electroless plating to plate the inside of the holes and the substrate (see step (1) in col. 15), etching a strip conductor image into the plated layer (34, Fig. 1C; see step (1) in col. 15), filling the holes with a medium (40, Figs. 2E-2G; see step (4) in col. 15), lacquering the surfaces of the substrate (see Fig. 2H; see step (8) in col. 16), and producing strip conductors (54, Figs. 4N and 4O; see steps (13) and

(14) in col. 17) arranged above the through-connections. See *Response to Arguments* below.

Regarding claim 8, as best understood, the lacquer certainly is a standard media variant (see rejection under 35 U.S.C. 112, 2nd paragraph).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 6-12** are rejected under 35 U.S.C. 103(a) as being unpatentable over APA (Applicant's admitted prior art) in view of Hirose.

8. The rejection is maintained. See the Office Action mailed on 10/31/2007 and the *Response to Arguments* section below. Regarding claim 8, it should be noted that the lacquer is certainly a standard media variant. See the rejection under 35 U.S.C. 112, 2nd paragraph.

Response to Arguments

9. Applicant's arguments filed 1/31/2008 have been fully considered but they are not persuasive.

10. Specifically, Applicant argues Hirose discloses depositing metal only in the borings without mentioning that metal is deposited anywhere else, whereas in Applicant's method there is no need for an initial copper cladding, since metal is

deposited everywhere so as to build an electrically conductive general layer, including in the borings.

11. The Examiner respectfully disagrees. The substrate is clearly coated, at least near the edges of the holes, since, as shown in Fig. 1(B), the metal deposited on the walls of the through hole is continuous with the metal on the top and bottom of the substrate. Moreover, Applicant's attention is directed to the fact that, as currently claimed, it is not clear when the electrically conductive general layer is built up, the claim does not specify that the through-connecting causes the general layer to be formed. Therefore, the copper of the copper-cladding can be thought of as an electrically conductive general layer that has been built up. Moreover, it should be noted that the term "through-connecting" is very broad and by no means necessitates any plating operation, and the through-connections do not have to be electrically conductive. In fact, the drilled holes themselves can be thought of as being the through-connections. Applicant's attention is further directed to Fig. 23 and col. 26, lns. 59-65 of Hirose.

12. Regarding the rejection under 35 U.S.C. 103(a) Applicant has failed to provide any arguments. It should be noted that in this rejection Hirose is only relied upon for its teaching of filling through holes with a medium. Therefore, Applicant's arguments presented with respect to Hirose as applied in the rejection under 35 U.S.C. 102(b) do not apply. The rejection is maintained.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LIVIUS R. CAZAN whose telephone number is (571)272-8032. The examiner can normally be reached on M-T 6:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on (571)272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. Dexter Tugbang/
Primary Examiner
Art Unit 3729

/L. R. C./ 4/30/2008
Examiner, Art Unit 3729